Abstract

A communication system and method are disclosed to provide a wider gain bandwidth. One embodiment of the invention is a communication system comprising a transmitter, a Phosphate-doped fiber span, a receiver, and a continuous wavelength light system. When in operation, the transmitter transmits optical signals over the Phosphate-doped fiber span for receipt by the receiver. Concurrently, the continuous wavelength light system pumps continuous wavelength light onto the Phosphate-doped fiber span. The pumping by the continuous wavelength light system generates a total gain bandwidth of at least 120 nm.